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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/606,407	06/29/2000	Jang Jin Yoo	8733.20135	7073

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EXAMINER

SCHECHTER, ANDREW M

ART UNIT	PAPER NUMBER
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2871

DATE MAILED: 11/07/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/606,407

Applicant(s)

YOO ET AL.

Examiner

Andrew Schechter

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 August 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 and 18-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 and 18-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 1 August 2002 have been fully considered but they are not persuasive.

The amendment of claims 4, 12-16, 18, and 37 to place them in independent form and the cancellation of claim 17 initially made claims 4-6, 12-16, 18, and 37 allowable. However, a new reference, U.S. Patent No. 6,462,798 to *Kim et al.*, has been published recently which anticipates claims 1-16 and 18-37.

The applicant argues that claim 30 complies with 35 U.S.C. 112, 2nd paragraph and cite various remarks from the specification. This is not persuasive, as the applicant does not address the central question: if "the regions of the alignment film are not aligned" as in claim 30, how can the "liquid crystal molecules of the liquid crystal layer have different alignment characteristics on each region" as in claim 28? The examiner wonders whether "not aligned" in claim 30 is meant to mean that the alignment layer has not been alignment-treated, that is, subjected to further processing after being formed, while "have different alignment characteristics" in claim 28 means that the liquid crystal in the at least two regions have different orientations due to the presence of electric-field inducing windows and/or dielectric structures which differ for the regions. Is this the intent of the applicant? Pending an affirmative answer or other satisfactory explanation, the examiner maintains the rejection of claim 30 under 35 U.S.C. 112, 2nd paragraph.

Regarding the previous rejection under 35 U.S.C. 103, the applicant argues that there is no motivation to combine *Lien* and *Ueda*, that doing so teaches away from *Lien*, and that doing so is merely impermissible hindsight. These arguments are not persuasive.

First, the motivation given for incorporating the *Ueda*'s common auxiliary electrode in the device of *Lien* is satisfactory; one of ordinary skill in the art would know that "acts as a shield, reduces parasitic capacitance between the pixels and signal lines, and forms a storage capacitor without additional production steps" is not only a description of the function of the electrode, but also a description of the benefits its use conveys, in improving the quality of the display and the contrast, eliminating image-distorting cross-talk effects, and minimizing the production process needed to make the device.

Second, the argument that *Ueda*'s common-auxiliary electrode teaches away from the invention of *Lien* misunderstands the combination. The passage cited by the applicant [col. 1, lines 40-51 of *Lien*] refers to an attempt to solve the problem of wide-angle viewing by making "a pattern of openings ... formed in the common electrode." This was viewed as an unsuccessful attempt by *Lien*, who instead proposed to solve the wide-angle viewing problem with a variety of walls. As a separate issue, *Lien* omits explicit discussion of a variety of standard LCD features, such as color filters on the light shielding layer [for color], passivation layers [for protecting various layers, flattening, etc.], and common-auxiliary electrodes [for increasing the storage capacitance to produce a longer holding time for the pixel voltages, possibly acting as a light shield,

etc.]. The common-auxiliary electrode of *Ueda* is combined with the device of *Lien*, not to further address the wide-angle viewing problem as the applicant seems to suggest, but to remedy this omission of *Lien*. Therefore, there is no "teaching away" from the purpose of *Lien*.

Third, the examiner does not agree that the combination relies on impermissible hindsight. The use, function, and benefits of common-auxiliary electrodes are well-known in the LCD art (giving rise to sub-classes 349/38 and 349/39), so the motivation to incorporate the common-auxiliary electrode of *Ueda* into the device of *Lien* would not require any special information gleaned from the applicant's specification.

The applicant "traverses the assertion that the combination of elements recited in claims 1-3, 7-11, 17, and 19-36 are well-known, and request the Examiner to provide evidence" [p. 11]. This statement, that the "combination of elements... is well-known" was never made by the examiner. Rather, the examiner stated only that the additional features of the relevant dependent claims were well-known and conventional to ones of ordinary skill in the art. Regardless, to expedite prosecution, the examiner notes that U.S. Patent Nos. 5,459,596, 6,285,431, and 6,462,798 (all already of record) disclose passivation layers and U.S. Patent Nos. 5,956,109, 6,157,426, and 6,462,798 disclose forming a second substrate with a color filter layer on a light shielding layer. These patents are evidence that passivation layers and color filters on light shielding layers are well-known and conventional in the art as stated in the rejection of claim 1.

The applicant "traverses the assertion that the features recited in claims 7, 8, 17, 19, 20, 22, 24-26, and 32-34 are well-known". Rather than cite references to

demonstrate the well-known nature of these features, the examiner withdraws all the rejections over *Lien* in view of *Ueda* under 35 U.S.C. 103 in favor of the following rejections under 35 U.S.C. 102(e), making the previous taking of official notice by the examiner a moot point.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 30 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

If both regions are not aligned, as in claim 30, how can they be responsible ("so that" in line 3 of claim 28) for different alignment characteristics as in claim 28?

4. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The phrase "L-shaped" to describe a TFT is possibly unclear. Where in the specification is support found for this phrase? For examining purposes, the examiner will assume that the applicant is referring to the structure described in U.S. Patent No. 5,694,185.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

6. Claims 1-16 and 18-37 are rejected under 35 U.S.C. 102(e) as being anticipated by *Kim et al.*, U.S. Patent No. 6,462,798.

Kim discloses [see Figs. 3 and 11, for instance] a multi-domain LCD comprising first and second substrates [31, 33], gate lines [1], data lines [3] defining pixel regions, a common auxiliary electrode [15] on a layer equal to the gate lines surrounding the pixel region, a gate insulating film [35], a passivation film [37], a pixel electrode [13], a light-shielding layer [25] on the second substrate, a color filter layer [23] on the light-shielding layer, a common electrode [17] on the color filter layer, a plurality of electric field distortion dielectric structures [53] patterned in different forms within neighboring pixels [see Fig. 11], and an alignment film [not shown in figures, see abstract]. Claims 1, 35, and 36 are therefore anticipated.

The pixel electrode and light-shielding layer can overlap the common-auxiliary electrode, as shown in Fig. 5a, so claims 2 and 3 are anticipated. The pixel electrode does not overlap the common auxiliary electrode in Fig. 3a, while the light-shielding pixel does overlap the pixel electrode, so claims 4 and 5 are anticipated. The gate insulating film and passivation film are formed on the whole substrate, which includes a "region except the common auxiliary electrode", so claim 6 is also anticipated.

The common auxiliary electrode is electrically connected with the common electrode [col. 4, lines 34-37], so claim 7 is anticipated. The TFT is described as being that of U.S. Patent No. 5,694,185, which is there described as "L-shaped", so claim 8 is anticipated. The dielectric structures can be on the pixel or common electrodes, or on the color filter layer [col. 6, lines 18-20], so claims 9-11 are anticipated.

The pixel electrode, passivation layer, gate insulating film, common electrode, and/or color filter layer can have an electric field induction window [col. 6, lines 20-24], as can an overcoat layer on the color filter layer [col. 9, lines 61-62], so claims 12-16, 18, and 37 are anticipated. The passivation layer is BCB or SiNx [col. 4, lines 26-28] so claims 19 and 20 are anticipated. The pixel electrode and common electrode are ITO and the common auxiliary electrode is Al [col. 4], so claims 21-23 are anticipated.

The dielectric constant of the dielectric structure is smaller than that of the liquid crystal and the dielectric structure is a photosensitive material, such as BCB [col. 4, lines 49-55], so claims 24-26 are anticipated.

The pixel region is divided into two regions with different driving characteristics, and different alignment characteristics; at least one region can be aligned, and/or there are regions which are not aligned [col. 6, lines 46-63], so claims 27-30 are anticipated.


The liquid crystal has positive or negative dielectric anisotropy, there can be a negative uniaxial or negative biaxial film, and the liquid crystal can include chiral dopants [col. 2, lines 30-40], so claim 31-34 are anticipated.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Schechter whose telephone number is (703) 306-5801. The examiner can normally be reached on Monday - Friday, 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Sikes can be reached on (703) 308-4842. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-4711 for regular communications and (703) 746-4711 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


Andrew Schechter
October 19, 2002


TOANTON
PRIMARY EXAMINER